Patent claims

1. A pyrotechnic microsystem (7, 1') comprising a substrate having at least two separate electrical initiation zones of a pyrotechnic material deposited on the substrate, characterized in that the same pyrotechnic material deposit (721, 721', 13) covers both initiation zones, said deposit (721, 721', 13) produced on the substrate having a thickness sufficiently small for the initiation of the pyrotechnic material at one initiation zone to remain localized and not propagate to the other initiation zone, but sufficient to generate a specific gas quantity.

2. The microsystem (7, 1') as claimed in claim 1, characterized in that the pyrotechnic material deposit (721, 721', 13) is produced with a thickness of less than 100 μm.

3. The microsystem (7, 1') as claimed in claim 1 or 2, characterized in that the substrate is produced from an assembly of superimposed layers (71, 72, 73, 74 and 10, 11, 12).

4. The microsystem (7, 1') as claimed in claim 3, characterized in that the pyrotechnic material deposit (721', 13) constitutes one of the superimposed layers (71, 72, 73, 74 and 10, 11, 12).

5. The microsystem (7, 1') as claimed in claim 4, characterized in that the pyrotechnic material deposit (721', 13) is used as an adhesive for assembly between a layer (72, 10) lying above said deposit (721', 13) and a layer (73, 11) lying below said deposit (721', 13).

6. The microsystem (7, 1') as claimed in claim 1, characterized in that the deposited pyrotechnic material is in the form of a nitrocellulose-based varnish.

7. The microsystem (7, 1') as claimed in claim 6, characterized in that the varnish is deposited with a thickness of between 5 and 40 µm after drying.

8. The microsystem (7, 1') as claimed in claim 1, characterized in that each of the initiation zones can be produced from an electrical resistance on the substrate.

9. The microsystem (7, 1') as claimed in claim 1, characterized in that each of the initiation zones can be produced at the point of contact of a conductive finger (6a,...,6h), connected to an electrical generator (4) on the substrate made of metallic substance, which is also connected to said generator (4).

10. The microsystem (7, 1') as claimed in claim 3, characterized in that it comprises a deformable membrane (710, 12) partially delimiting a combustion chamber (720, 2a,..., 2h) intended to receive the gases generated by at least one part of the pyrotechnic material deposit (721, 721', 13) in contact with one of the initiation zones.

11. The microsystem (7, 1') as claimed in claim 10, characterized in that it comprises a layer (72, 10) through which an orifice forming the combustion chamber (720, 2a,..., 2h) is formed, said layer (72, 10) being held between the membrane (710, 12), itself forming a layer, and the pyrotechnic substance deposit (721', 13).

12. A method for fabricating a microsystem (1') comprising a plurality of adjacent microactuators (1a,...,1h) established on a substrate, each microactuator (1a,...,1h) being capable of having a specific effect owing to the gases generated by the combustion of a pyrotechnic material initiated from an electrical initiation zone associated with each microactuator (1a,...,1h), characterized in that a pyrotechnic material layer (13) common to all the microactuators (1a,...,1h) is deposited on the substrate with a thickness sufficiently small for the initiation of the pyrotechnic substance in one initiation zone to remain localized and not propagate to the other initiation zone, but sufficient to generate a specific gas quantity.

13. The method as claimed in claim 12, characterized in that it consists only in stacking superimposed layers (10, 11, 12), the pyrotechnic material layer (13) constituting one of the layers of the stack.

14. The method as claimed in claim 12 or 13, characterized in that the pyrotechnic material layer (13) is deposited with a thickness of less than 100 µm.

15. The method as claimed in one of claims 12 to 14, characterized in that the pyrotechnic material layer (13) is deposited by coating, screen printing, pad printing, immersion or by spraying.